

**REMARKS/ARGUMENTS**

Upon entry of the Amendment, which amends Claims 1, 2 and 7-10, and adds Claims 11 and 12, Claims 1-12 remain pending.

In the May 6, 2004 Office Action, Claims 1 and 2 were rejected under 35 U.S.C. § 112, Second Paragraph, as allegedly being indefinite. Claims 1-10 were rejected under 35 U.S.C. § 103(a) for allegedly being unpatentable over Applicant's acknowledged prior art in view of U.S. Patent No. 4,967,109 to Steigerwald (hereinafter referred to as "Steigerwald"). Applicant respectfully requests reconsideration of the claims in view of the above amendments and the comments below.

***35 U.S.C. § 112, Second Paragraph, Claim Rejections***

On page 2 of the Office Action, Claims 1 and 2 are rejected under 35 U.S.C. § 112, Second Paragraph, as allegedly being indefinite. Specifically, it is asserted that use of the phrase "several times less than a duration" in Claims 1 and 2 renders the claims indefinite, since the "metes and bounds of the phrase...is unascertainable".

Although Applicant does not necessarily agree with this rejection, in response Applicant has amended Claims 1 and 2 so that it no longer uses the "several times less than a duration" phrase. In light of the amendments made, Applicant respectfully requests that the § 112 rejections of Claims 1 and 2 be withdrawn.

***35 U.S.C. § 103(a) Claim Rejections***

In the Office Action, Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over admitted prior art in view of Steigerwald. For the

following reasons Applicant respectfully believes that these § 103(a) rejections cannot be properly maintained.

Steigerwald discloses a gate driver circuit for driving a power switching device. The gate driver circuit utilizes a series resonant, consisting of an inductance connected in series with the input capacitance of the power switching device, to reduce switching losses. Starting at line 30 in column 3 of Steigerwald, it is explained that a turn-on signal is applied to a driver circuit (i.e. transistor 14 in Figure 2) to cause the resonant circuit to “ring up” to approximately twice the supply voltage ( $V_s$ ). Use of the resonant circuit allows the supply voltage to be reduced from that used in prior art approaches.

By contrast, independent Claim 1 of the present patent application claims a method of driving a switch mode power supply using “a pulse having a duration that is less than a duration of a corresponding one of the first portion of the duty cycle and the second portion of the duty cycle”. Steigerwald does not teach or suggest this characteristic of Claim 1. To the contrary, Figures 3A and 3B and col. 3, line 30 through col. 4, line 12 of Steigerwald suggest that transistor 14 is on for the entire time that power device 10 is on. For at least this reason, therefore, Applicant respectfully believes that the § 103 rejection of independent Claim 1 cannot be properly maintained.

Independent Claim 3 claims a “method of driving a synchronous rectification buck converter having a main transistor coupled to a power supply input and to an output filter and a first drive circuit for driving the main transistor”. Claim 3 also recites that the main transistor, after being charged by “applying an on pulse to a gate electrode of one transistor within the first drive circuit”, is maintained “for a duration at least several times a duration of said on pulse”. Steigerwald does not teach or suggest this characteristic of

Claim 3. To the contrary, Figures 3A and 3B and col. 3, line 30 through col. 4, line 12 of Steigerwald suggest that transistor 14 is on for the entire time that power device 10 is on. For at least this reason, therefore, Applicant respectfully believes that the § 103 rejection of independent Claim 3 cannot be properly maintained.

Independent Claim 7 claims an “RF amplification circuit having a phase path and a magnitude path”. The claimed RF amplification path is recited to comprise “an amplifier having at least a final stage” and an “RF input coupled to the phase path” of the RF amplification circuit. Steigerwald does not teach or suggest an amplification circuit having an amplifier with these characteristics. Claim 7 also recites how the RF amplification circuit comprises a “switch mode power supply” that is coupled to a power input terminal of the amplifier”. The switch mode power supply is recited to be comprised of “a transistor switch, a driver circuit for driving the transistor switch, and a controller”. The controller is recited to cause “the driver circuit to operate in a charge transfer mode in which a pulse of short duration relative to a duty cycle of the switch mode power supply is used to turn on the transistor switch”. Not only does the cited prior art not teach or suggest a switch mode power supply being coupled to a power input terminal of an amplifier, it also does not teach or suggest a controller that causes a driver circuit to operate in a charge transfer mode “in which a pulse of short duration relative to a duty cycle of the switch mode power supply is used to turn on the transistor switch”. Figures 3A and 3B and col. 3, line 30 through col. 4, line 12 of Steigerwald suggest that transistor 14 is on for the entire time that power device 10 is on. For at least all of the foregoing reasons, therefore, Applicant respectfully believes that the § 103 rejection of independent Claim 7 cannot be properly maintained.

Independent Claim 8 claims a “method of amplifying an RF input signal using an amplification circuit including an amplifier having at least a final stage and a switch mode power supply having a transistor switch, a driver circuit and a controller”. Claim 8 includes a characteristic that “a pulse of short duration relative to a duty cycle of the switch mode power supply is used to turn on the transistor switch”. Steigerwald does not teach or suggest this characteristic of Claim 8. To the contrary, Figures 3A and 3B and col. 3, line 30 through col. 4, line 12 of Steigerwald suggest that transistor 14 is on for the entire time that power device 10 is on. For at least this reason, therefore, Applicant respectfully believes that the § 103 rejection of independent Claim 8 cannot be properly maintained. Further, the cited prior art does not teach or suggest the first two steps of Claim 8, which recite: (i) “applying a constant-envelope phase or frequency modulated RF input signal to an RF input terminal of the amplifier”; or (ii) “producing an amplitude-modulated RF output signal at an output terminal of the amplifier by...”. Indeed, there is no teaching or suggestion whatsoever of an “amplifier”; a “constant-envelope phase or frequency modulated RF input signal” being input to an “input terminal of the amplifier”; or producing an “amplitude-modulated RF output signal” at an “output terminal of the amplifier. For at least these reasons, therefore, Applicant respectfully believes that the § 103 rejection of independent Claim 8 cannot be properly maintained.

Independent Claim 9 claims a “switch mode power supply” having a “transistor switch”, a “driver circuit”, and “a controller”. The controller is recited to cause “the driver circuit “to operate in a charge transfer mode in which a pulse of short duration relative to a duty cycle of the switch mode power supply is used to turn on the transistor

switch”. Whereas Steigerwald describes a transistor switch and a driver circuit, it does not teach or suggest a controller of the type recited in Claim 9. For at least this reason, Applicant respectfully believes that the § 103 rejection of independent Claim 9 cannot be properly maintained.

Independent Claim 10 claims a “method of operating a switch mode power supply” where a “driver circuit” is controlled “to operate in a charge transfer mode in which a pulse of short duration relative to a duty cycle of the switch mode power supply is used to turn on the transistor switch”. Claim 10 also recites how the driver circuit is placed “in a high-output-impedance state” during a “substantial portion of the duty cycle of the switch mode power supply”. Steigerwald does not teach or suggest either of these characteristics of Claim 10. To the contrary, Figures 3A and 3B and col. 3, line 30 through col. 4, line 12 of Steigerwald suggest that transistor 14 is on for the entire time that power device 10 is on. Moreover, Steigerwald provides no teaching or suggestion of how its driver circuit might be placed in a “high-output-impedance state” during a “substantial portion of the duty cycle of the switch mode power supply”. For at least these reasons, therefore, Applicant respectfully believes that the § 103 rejection of independent Claim 10 cannot be properly maintained.

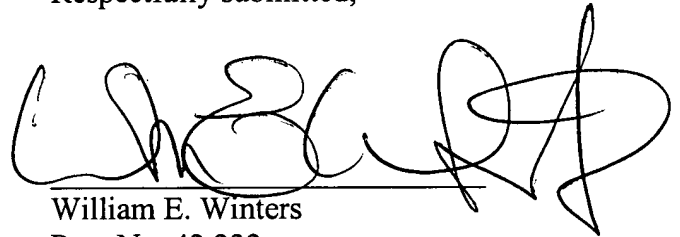
The other rejected claims (i.e. Claims 2 and 4-6) all depend from either independent Claim 1 or independent Claim 3. Accordingly, they are believed to be patentable over the cited art of record for at least the same reasons provided above. Applicant respectfully requests, therefore, that the § 103 rejections of dependent Claims 2 and 4-6 also be withdrawn.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 408-282-1857.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'W. E. Winters', written over a horizontal line.

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